Saskatchewan
Agriculture
and Food

FINAL REPORT

Agriculture Research Branch
Saskatchewan Agriculture, Food & Rural Revitalization

20010358

EXTENSION SERVICES FOR THE ALFALFA SEED AND LEAFCUTTING BEE INDUSTRY

FINAL REPORT

Funded by
Technology Adoption Demonstration

March 01, 2003

Prepared by: D. W. Goerzen, Biologist/Research Director
Saskatchewan Alfalfa Seed Producers Association
107 Science Place
Saskatoon SK S7N 0X2

104-04265/

SASKATCHEWAN ALFALFA SEED PRODUCERS' ASSOCIATION

TAD PROJECT 20010358
FINAL REPORT

Extension services for the alfalfa seed and leafcutting bee industry

March 01, 2003

D.W. Goerzen
Biologist / Research Director
Saskatchewan Alfalfa Seed Producers Association
107 Science Place
Saskatoon, SK S7N 0X2

Table of Contents

A. Summary

B. Technical Report

Project activities and achievements
for period April 01, 2002 - March 31, 2003

C. Personnel

D. Equipment

E. Project Developed Materials

F. Project Photos

G. Acknowledgement

H. Expense Statement

A. Summary

Alfalfa seed production in Saskatchewan has expanded rapidly to the current level of over 125,000 acres, representing 75% of the alfalfa seed acreage in Canada. The alfalfa leafcutting bee population in the province has grown to a total of approximately 2.5 billion. This population doubles each year, with excess production marketed primarily to alfalfa seed growers in the United States. This project is designed to provide technical information to alfalfa seed producers which will assist in optimizing alfalfa leafcutting bee management and alfalfa seed production; the project will also assist the industry in identifying new alternative crop pollination opportunities for alfalfa leafcutting bees. These initiatives will serve to enhance alfalfa seed production in Saskatchewan and will also increase the value of alfalfa leafcutting bees in export markets.

B. Technical report

Project activities and achievements
for period April 01, 2002 - March 31, 2003

1. Daily specialist extension work with Saskatchewan alfalfa seed producers through personal contact at meetings, field days, and at the farm-site, and through contact via telephone, fax, and e-mail, regarding extension information and advice in the following areas...

a. control of alfalfa leafcutting bee moulds and chalkbrood disease.
b. spring, summer, and fall alfalfa leafcutting bee parasite control.
c. determination of alfalfa leafcutting bee cell quality.
d. alfalfa leafcutting bee drifting in the field.
e. alfalfa leafcutting bee incubator design.
f. cooling and holding alfalfa leafcutting bees in the incubator.
g. alfalfa leafcutting bee nest material types.
h. identification of stored product pests in alfalfa leafcutting bee populations.
i. alfalfa leafcutting bee field shelter design.
j. alfalfa leafcutting bee reproduction and biology.
k. alfalfa leafcutting bee insurance coverage guidelines.
l. use of cover crops for alfalfa seed stand establishment.
m. common alfalfa varieties grown in Saskatchewan.
n. pocket gopher control in alfalfa seed fields.
o. weed control in alfalfa seed fields.
p. identification of insect pests in alfalfa seed fields.
q. control of insect pests in alfalfa seed fields.
r. pre-harvest dessication of alfalfa seed fields.
s. fall alfalfa leafcutting bee management prior to harvesting bee cells.
t. the economics of alfalfa seed production.
u. expediting contact with SAF re: application forms for foundation alfalfa seed.
v. alfalfa seed crop insurance coverage guidelines.
w. new crop pollination opportunities for alfalfa leafcutting bees.
x. disease control in alfalfa seed production.
y. expediting contact with the Saskatchewan Forage Council re: forage-related issues.

2. Distribution of extension material published by the Saskatchewan Alfalfa Seed Producers Association, Agriculture & Agri-Food Canada, and Saskatchewan Agriculture & Food on various aspects of alfalfa seed production and alfalfa leafcutting bee management through mail-out of extension bulletins and industry information to alfalfa seed producers.

3. Editing, publication, and distribution of the Saskatchewan Alfalfa Seed Producers Association newsletter containing extension information of interest to alfalfa seed producers in areas including weed control, disease control, insect control, soil fertility, and alfalfa leafcutting bee management.

4. Work with the Saskatchewan Alfalfa Seed Producers Association in planning the 2002 SASPA annual field day, held in Carrot River / Pasquia Regional Park on July 18, 2002. Approximately 75 alfalfa seed producers, agricultural researchers, members of the seed trade, and extension personnel attended this event.

5. Work with the Saskatchewan Alfalfa Seed Producers Association on planning and coordination of the technical program and trade-show associated with the SASPA 2003 Saskatchewan alfalfa seed conference held in Saskatoon on January 09 - 10, 2003. This well-publicized conference, open to all producers interested in alfalfa seed production, addressed many aspects of alfalfa seed production and alfalfa leafcutting bee management. Over 125 alfalfa seed producers, agricultural researchers, members of the seed trade industry , and agricultural extension personnel attended this conference. The Saskatchewan alfalfa seed conference is the most comprehensive alfalfa seed production meeting held in Canada.

6. Work in cooperation with AgInfonet on the AgLibrary internet initiative in order to establish and continuously update the alfalfa seed web-site in the crops area of AgLibrary, for dissemination of information on alfalfa seed production and alfalfa leafcutting bee management to all producers currently involved in alfalfa seed production, producers interested in alfalfa seed production, agricultural research workers, and agricultural extension personnel.

7. Work in cooperation with Saskatchewan Agriculture & Food on an *ad hoc* basis to provide scientific advice and technical information on Saskatchewan alfalfa leafcutting bee populations (e.g. evaluation of alfalfa leafcutting bee disease and parasite levels, determination of alfalfa leafcutting bee live count) in order to facilitate overseas shipments of alfalfa leafcutting bee cells.

8. Work in cooperation with the members of the Saskatchewan seed trade industry, Agriculture & Agri-Food Canada, the Canadian Food Inspection Agency, Saskatchewan Agriculture & Food, and the Saskatchewan Trade and Export Partnership to address and resolve concerns expressed by officials within the Chinese ministry of agriculture with respect to the possible presence of *Verticillium* wilt (*Verticillium albo-atrum*) in alfalfa seed produced in Saskatchewan, which has resulted in a quarantine order on importation of Saskatchewan-produced alfalfa seed into China.

9. Ongoing work in an advisory capacity to Saskatchewan alfalfa seed producers pursuing alfalfa leafcutting bee markets in Australia, China, eastern Europe, and South America. Additional work to assist Saskatchewan alfalfa seed producers in identifying and developing alternative crop pollination opportunities utilizing alfalfa leafcutting bees.

10. Responsibilities as a member of the technical advisory committee to the Canadian Alfalfa Seed Council (CASC) to provide scientific and technical advice on alfalfa leafcutting bee and alfalfa seed-related issues, and to act as technical adviser to personnel at the Canadian Cocoon Testing Centre (CCTC) in Brooks, Alberta on matters associated with evaluation of alfalfa leafcutting bee samples sent to CCTC by alfalfa seed producers from Saskatchewan and other provinces.

11. Responsibilities for providing alfalfa leafcutting bee and alfalfa seed production-related extension information and extension material to agricultural extension personnel with Saskatchewan Agriculture & Food, Alberta Agriculture, and Manitoba Agriculture.

12. Work on an ongoing basis with program development personnel at the Saskatchewan Crop Insurance Corporation to provide technical advice on alfalfa leafcutting bee management and alfalfa seed production in order to assist in the continuing development of the SCIC alfalfa seed crop insurance program.

13. Responsibilities in the capacity of alfalfa seed technical expert as adviser to the Saskatchewan Alfalfa Seed Producers Association on Agri-Food Innovation Fund (AFIF) / Spoke projects in the following areas...

a. weed control in alfalfa seed production.
b. disease control in alfalfa seed production.
c. establishment of pea aphid thresholds in alfalfa grown for seed.
d. identification of alternative crops for pollination by the alfalfa leafcutting bee.

Coordination of final research project reports prepared for inclusion in the "Alfalfa Seed Production" chapter of the "Canada-Saskatchewan Agri-Food Innovation Fund Spoke Program Research Reports (1997 - 2002)" jointly published by Agriculture & Agri-Food Canada and Saskatchewan Agriculture & Food in August, 2002.

14. Work with the Saskatchewan Alfalfa Seed Producers Development Commission on development and evaluation of an ongoing alfalfa seed production and alfalfa leafcutting bee management-related producer research priority survey, to assist in determining the top research priorities of the Saskatchewan alfalfa seed industry.

15. Work on coordination of alfalfa leafcutting bee alternative crop pollination initiatives in collaboration with the University of Saskatchewan Department of Plant Science including release of alfalfa leafcutting bees on pumpkin, tomato, and eggplant grown on open field plots, and release of alfalfa leafcutting bees on melon, pepper, and tomato grown in a plastic tunnel / greenhouse environment. This work was undertaken on horticulture plots in order to demonstrate to Saskatchewan fruit and vegetable growers the benefits of alfalfa leafcutting bee pollination of crops. Additional work was carried out in an advisory capacity with Saskatchewan alfalfa seed producers working to develop alternative crop pollination initiatives with respect to blueberry pollination in eastern Canada and cranberry pollination in the northeastern United States.

16. Work in cooperation with Saskatchewan Agriculture & Food, Manitoba Agriculture, Alberta Agriculture, Manitoba Forage Seed Association, Alberta Irrigated Alfalfa Seed Producers Association, and Agriculture & Agri-Food Canada to develop a list of alfalfa seed production-related minor use registration priorities (fungicides, herbicides, insecticides) for use in March, 2003 consultation meetings with PMRA (Ottawa) to establish national minor use priorities.

C. Personnel

TAD PROJECT 20010358
Extension services for the alfalfa seed
and leafcutting bee industry

Project Leader

D.W. Goerzen - Biologist / Research Director
Saskatchewan Alfalfa Seed Producers Association

Time spent on project - 50%
Salary - $ 27,500.00
(for period April 01, 2002 - March 31, 2003)

D. Equipment

No equipment expenditures have been undertaken in relation to this project.

E. Project Developed Materials

With the assistance of project funding received from the Saskatchewan Agriculture and Food Technology Adoption and Demonstration Fund, the SASPA extension publication 97-01 "Alfalfa seed and leafcutting bee production in Saskatchewan", which was reprinted in September 2001, continues to be distributed to alfalfa seed producers and extension personnel.

F. Project Photos

No project-related photographs are available for inclusion in this project progress report.

G. Acknowledgement

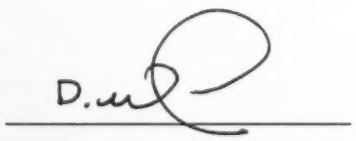
An acknowledgement of funding received from the Saskatchewan Agriculture and Food Technology Adoption and Demonstration Fund has been included in the September 2001 reprinting of SASPA extension publication 97-01 "Alfalfa seed and leafcutting bee production in Saskatchewan". The funding has also been acknowledged in all extension articles where material relating to the project has been published, and at all forums including conferences, meetings, and producer field days where material relating to the project has been discussed.

H. Expense Statement

TAD PROJECT 20010358
Extension services for the alfalfa seed
and leafcutting bee industry

Expenditures (April 01, 2002 - March 31, 2003)

Salary	27,500.00
Travel	1,484.24
Printing & Distribution	1,081.35
Total expenditures	**30,065.59**



D.W. Goerzen
Executive Director
Saskatchewan Alfalfa
Seed Producers Association
March 01, 2003